

provided at a pair of cutting blade units provided with motors for rotating said pair of cutting blades, the alignment being performed when said pair of cutting blade units cuts said workpiece, said alignment method comprising the steps of:

registering reference patterns at at least one point of low magnification and one point of high magnification on said workpiece located at a preset position;

simultaneously producing images of patterns at two points in proximity to the center of said workpiece with two imaging means provided at said pair of cutting blade units, and aligning said workpiece such that the images of the patterns at said two points can match with said reference patterns; and

moving either one of said two imaging means to a position so as to produce an image of a pattern at one point at the outer circumference of said workpiece and aligning said workpiece such that the image of the pattern at the point at the outer circumference can match with said reference patterns.

2. The method as defined in claim 1, further comprising the steps of producing images of reference patterns of the low magnification and the high magnification on said workpiece with the use of said two imaging means after having registered the reference patterns of the low magnification and the high magnification.

3. A method of aligning cutting lines of a workpiece, which depend on patterns, with a pair of cutting blades provided at a pair of cutting blade units provided with motors for rotating said pair of cutting blades, the alignment being performed when said pair of cutting blade units cuts said workpiece, said alignment method comprising the steps of:

registering reference patterns at at least one point of low magnification and one point of high magnification on said workpiece located at a preset position;

simultaneously producing images of patterns at two points in proximity to the center of said workpiece with two imaging means provided at said pair of cutting blade units, and aligning said workpiece such that the images of the patterns at said two points can match with said reference patterns of the low magnification;

moving at least one of said two imaging means to a position so as to produce an image of a pattern at one point at the outer circumference of said workpiece and aligning said workpiece such that the image of the pattern at the point at the outer circumference can match with said at least one reference pattern of the low magnification;

switching the magnification from the low magnification to the high magnification, producing a second image of a pattern at one point at the outer circumference of said workpiece with said at least one of said two imaging means, and aligning said workpiece so that the second image at the point at the outer circumference can match with said at least one reference pattern of high magnification; and

rotating said workpiece 90°, producing a rotated image of a pattern at one point at the outer circumference of said workpiece with said at least one of said two imaging means, and aligning said workpiece so that the rotated image at said one point can match with said at least one reference pattern of high magnification.

4. The method as defined in claim 2, further comprising the steps of producing images of reference patterns of the low magnification and the high magnification on said workpiece with the use of said two imaging means after having registered the reference patterns of the low magnification and the high magnification.

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5. An alignment apparatus for aligning cutting lines of a workpiece, which depend on patterns, said alignment apparatus comprising:

workpiece mounting means provided with an X-Y direction driving mechanism and a rotational direction driving mechanism;

(two imaging means provided producing images of patterns on said workpiece mounted on said workpiece mounting means;)

storage means in which reference patterns at at least one point of low magnification and one point of high magnification on said workpiece located at a preset position are registered in advance;

pattern matching means for comparing current images of patterns on said workpiece from said two imaging means with said reference patterns of the low magnification and the high magnification stored in said storage means and outputting a pattern matching signal reflecting the degree to which the current images match the stored reference patterns; and

control means for driving said workpiece mounting means in accordance with the output of said pattern matching

means to align said workpiece at a desired position.

6. A dicing machine having an alignment apparatus for aligning cutting lines of a workpiece, and cutting blade units for slicing a workpiece into semiconductor wafers, said cutting blade units being provided with a pair of cutting blades and motors for rotating said pair of cutting blades, wherein said alignment apparatus comprises:

workpiece mounting means provided with an X-Y direction driving mechanism and a rotational direction driving mechanism;

two imaging means provided at said pair of cutting blade units and producing images of patterns on said workpiece mounted on said workpiece mounting means;

storage means in which reference patterns at at least one point of low magnification and one point of high magnification on said workpiece located at a preset position are registered in advance;

pattern matching means for comparing current images of patterns on said workpiece from said two imaging means with said reference patterns of the low magnification and the high

magnification stored in said storage means
and outputting a pattern matching signal
reflecting the degree to which the current
images match the stored reference patterns;
and

control means for driving said
workpiece mounting means in accordance
with the output of said pattern matching
means to align said workpiece at a desired
position.

2025 RELEASE UNDER E.O. 14176